

ADVANCES IN EMPIRICAL ECONOMICS

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Fifteen years ago, Science published predictions from each of 60 scientists about the future of their fields. The physical and natural scientists wrote about a succession of breathtaking discoveries to be made [...] In sharp contrast, the (smaller number of) social scientists did not mention a single problem they thought might be addressed, much less solved, or any inventions or discoveries on the horizon. Instead, they wrote about social science scholarship—how we once studied this, and in the future we’re going to be studying that.

Fortunately, the editor’s accompanying warning was more prescient: “history would suggest that scientists tend to underestimate the future”.

Indeed.

King, G. (2011). Ensuring the Data-Rich Future of the Social Sciences. *Science* 331, no. 6018:719–721

This theme discusses how recent advances in empirical economics, computer science and data availability are empowering social scientists with the potential of solving problems and answering questions that, while crucial for both policy-makers and businesses, were previously intractable. The field of economics, because of its historically stronger ties with statistics and data analysis, enjoyed a particularly fast integration of data-driven approaches to research and problem-solving. This theme shows how the Credibility and the Data revolutions are shaping economists’ comparative advantages, skills and competences for decades to come.

We will discuss how this process is ongoing and far from accomplished: As established competences (such as econometrics) are renewed, economists must be prepared to add new sets of complementary skills (chiefly coding and programming) to their toolbox. This theme serves as an introduction to the potential of these skills and competences. Students will learn how and with which tools real-world problems can be solved through data-driven methodologies.

Meetings: We meet outside my office (4035B) in the alfa building. The time of the meetings will be scheduled with the participating students via e-mail at the start of the semester.

Material: We will discuss the assigned material during class, thus readings are mandatory (this rule is **strictly** enforced). The material is arranged in suggested reading order. All the material will be distributed in a shared dropbox folder.¹

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¹The instructor will send a link to join the shared folder once students decide on the theme for the semester.

1 The Credibility Revolution (Date TBD)

Or how we went from “Hardly anyone takes data analysis seriously” (Leamer, 1983) to “I keep saying the sexy job in the next ten years will be statisticians.” (Varian, 2009).

- Hamermesh, D. S. (2013). Six Decades of Top Economics Publishing: Who and How? *Journal of Economic Literature* 51, no. 1:162–172
- LaLonde, R. J. (1986). Evaluating the Econometric Evaluations of Training Programs with Experimental Data. *The American Economic Review* 76, no. 4:604–620
- Angrist, J. D. and J.-S. Pischke (2010). The Credibility Revolution in Empirical Economics: How Better Research Design is Taking the Con out of Econometrics. *The Journal of Economic Perspectives* 24, no. 2:3–30
- Angrist, J. D. and J.-S. Pischke (2014). Introduction. In *Mastering’metrics: The path from cause to effect*. Princeton University Press

2 The Data Revolution (I): Big Data (Date TBD)

Or how more data is always better, but not always.

- Video: Behavioral Economics and Public Policy: A Pragmatic Perspective, presentation by Raj Chetty² (examples of how large administrative datasets can help policy-making)
- Einav, L. and J. Levin (2014). Economics in the age of big data. *Science* 346, no. 6210:1243089
- Noriega, D. (2014). Big Data Requires a New Kind of Expert: The Econinformatrician
- Noriega, D. (2015). A Chat with Randall Lewis (Google) About “Big Data”
- Varian, H. R. (2014). Big Data: New Tricks for Econometrics. *Journal of Economic Perspectives* 28, no. 2:3–28

²For students receiving a printed version of this document, the link is <http://events.mediasite.com/Mediasite/Play/44057958d9fb44198c0f6a8ae47c35cd1d>

3 The Data Revolution (II): Unconventional Data Sources (Date TBD)

Or how data is everything, but with some effort also the other way around.

- Edelman, B. (2012). Using Internet Data for Economic Research. *The Journal of Economic Perspectives* 26, no. 2:189–206
- Chen, M. K. (2013). The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets. *American Economic Review* 103, no. 2:690–731
- **Either**³: Baker, S. R., N. Bloom, and S. J. Davis (2016). Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics* 131, no. 4:1593–1636
- **Or**³: Carozzi, F. and L. Repetto (2016). Sending the pork home: Birth town bias in transfers to Italian municipalities. *Journal of Public Economics* 134:42–52 (**& data appendix**)

4 Wrapping Up: Your Turn (Date TBD)

In this session the students will present and discuss with each other an individual proposal (max 5 pages) to analyze empirically a question or a problem that the student finds relevant for policy makers or businesses. The proposal should include a description of which methodology and which kind of data would be appropriate to study the problem in question. Moreover, the student should describe in details how the appropriate data could be acquired. The reading material for the session are the essays written by the other students, which should be uploaded 5 days before the meeting in the classroom's dedicated dropbox folder.

During the meeting the proposals will be dissected and analyzed in group, sharpening them up to the point that they could be used as blueprints for empirical essays, policy proposals, or consultant reports.

³These two last readings will be assigned at the end of meeting 2) and presented by the students to each other during meeting 3). Students should focus on the data innovations rather than the more technical parts of the papers.